

Mechanics | Definitions

Weight: Force of gravity acting on a mass

Mass: Amount of matter an object has

Force: Cause of a mass or body to change its velocity or direction

Newton: Force taken to accelerate a mass of 1kg by 1m/s

Momentum: Product of mass by velocity

Conservation of momentum: $M_1U_1 + M_2U_2 = M_1V_1 + M_2V_2$

Momentum before collision is equal to momentum after collision

Newtons law of universal gravitation: Force of attraction between any two bodies is proportional to the product of the two masses and inversely proportional to the distance squared between them

Work: Point of force moves in the direction of the force

Power: Work done per second or energy done per second

Newtons first law of motion: An object at rest remains at rest and an object in motion remains in motion unless an unbalanced external force act upon it.

Newtons second law of motion: When an external unbalanced force acts on a body, the rate of change of the bodies momentum is directly proportional to the force and in the direction of the force

Newtons third law of motion: Every action has an equal and opposite reaction

Potential energy: Energy a body has due to its position

Kinetic energy: Energy due to motion

Velocity: speed in a given direction

Acceleration: Rate of change of velocity with respect to time

Conservation of energy: Energy cannot be created or destroyed but can only change from one form to another